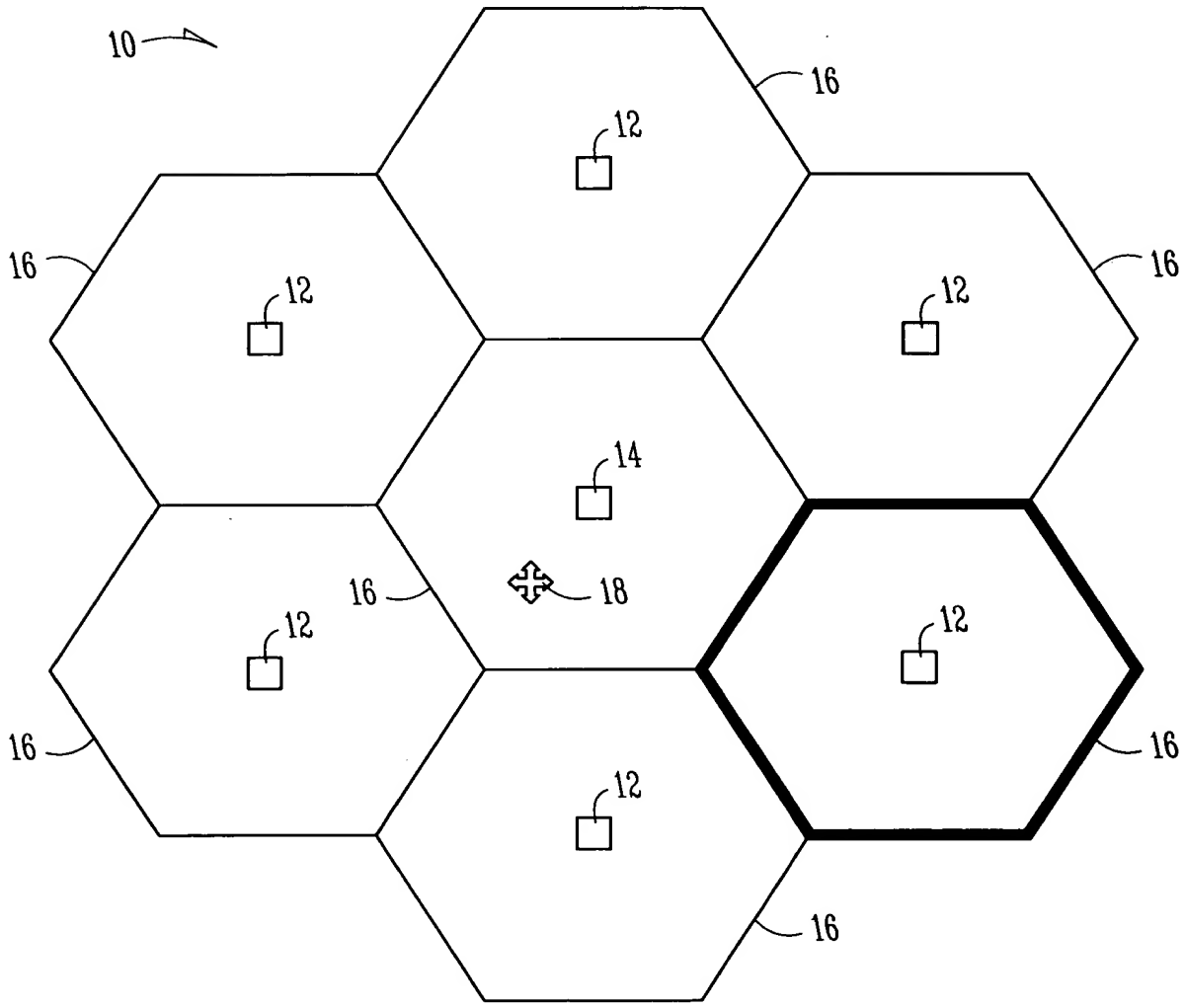
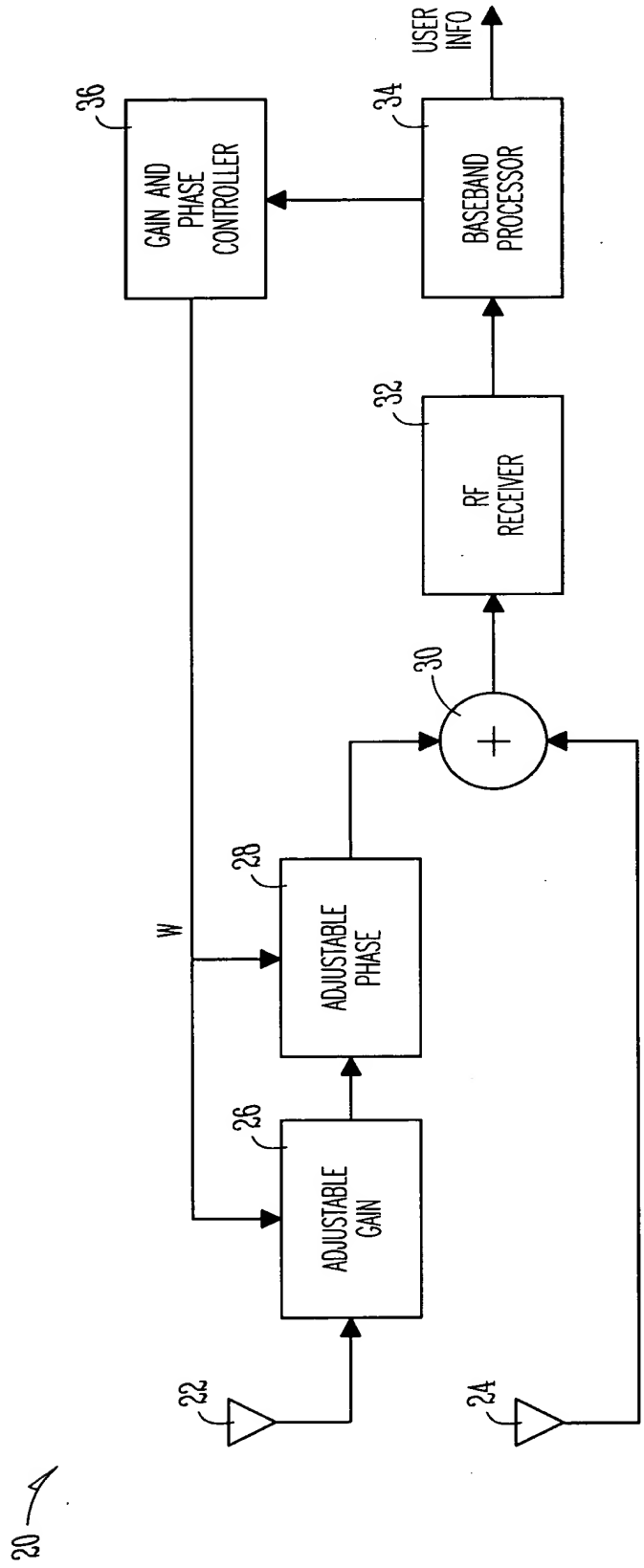


Fig. 1


USER INFO
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GAIN AND PHASE CONTROLLER
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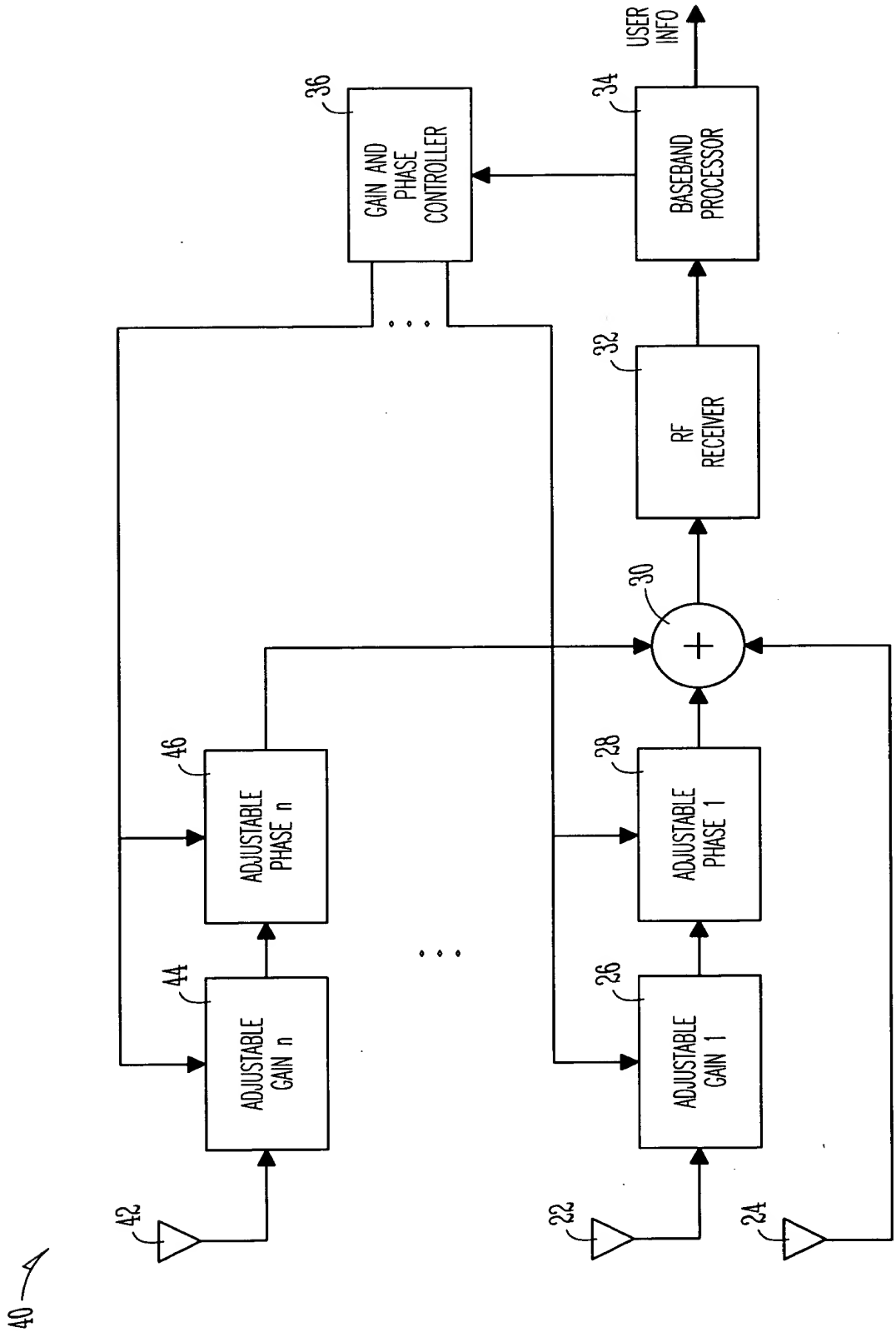
BASEBAND PROCESSOR
32
RF RECEIVER
30
28
ADJUSTABLE PHASE
W
26
ADJUSTABLE GAIN
22
24
20

Fig.2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ADJUSTABLE GAIN n
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ADJUSTABLE GAIN 1
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ADJUSTABLE PHASE 1
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30
32
RF RECEIVER
34
BASEBAND PROCESSOR
USER INFO
36
GAIN AND PHASE CONTROLLER

Fig. 3

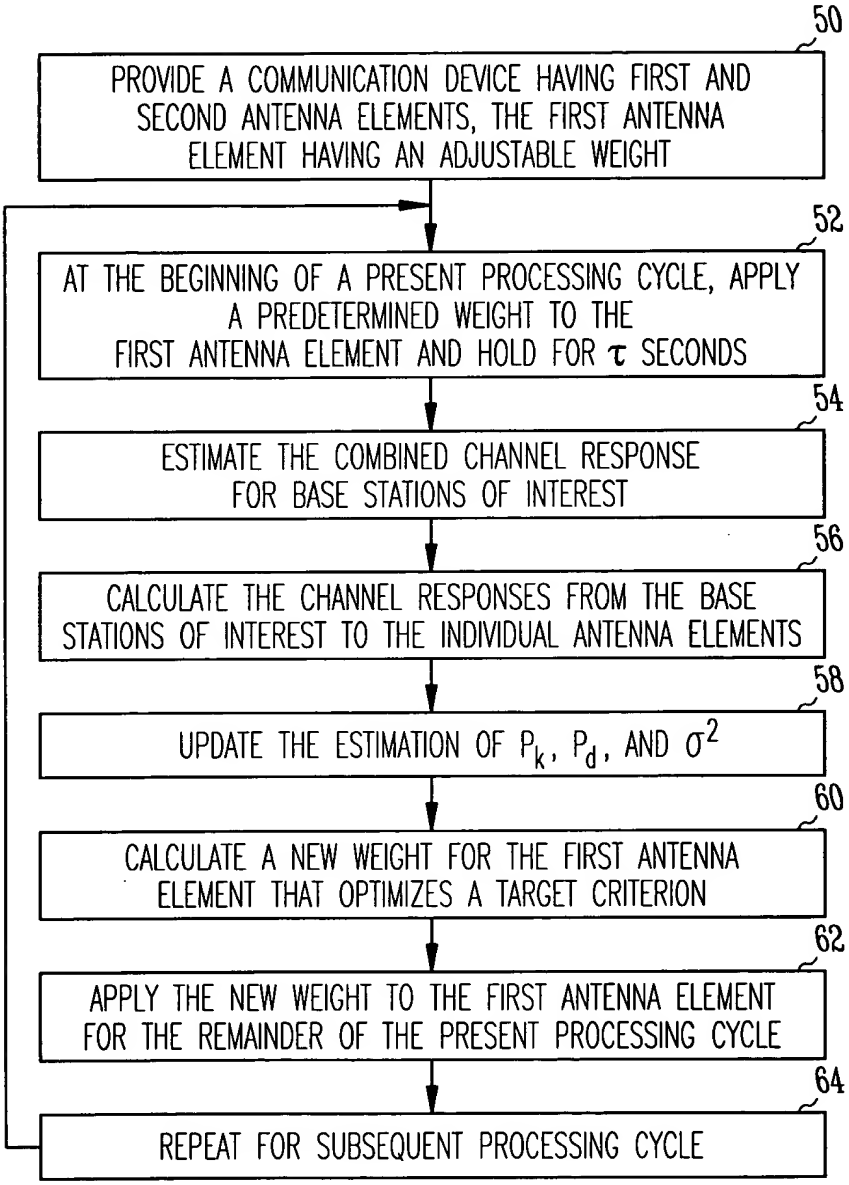
50
PROVIDE A COMMUNICATION DEVICE HAVING FIRST AND SECOND ANTENNA ELEMENTS, THE FIRST ANTENNA ELEMENT HAVING AN ADJUSTABLE WEIGHT
52
AT THE BEGINNING OF A PRESENT PROCESSING CYCLE, APPLY A PREDETERMINED WEIGHT TO THE FIRST ANTENNA ELEMENT AND HOLD FOR τ SECONDS
54
ESTIMATE THE COMBINED CHANNEL RESPONSE FOR BASE STATIONS OF INTEREST
56
CALCULATE THE CHANNEL RESPONSES FROM THE BASE STATIONS OF INTEREST TO THE INDIVIDUAL ANTENNA ELEMENTS
58
UPDATE THE ESTIMATION OF P_k, P_d, AND σ^2
60
CALCULATE A NEW WEIGHT FOR THE FIRST ANTENNA ELEMENT THAT OPTIMIZES A TARGET CRITERION
62
APPLY THE NEW WEIGHT TO THE FIRST ANTENNA ELEMENT FOR THE REMAINDER OF THE PRESENT PROCESSING CYCLE
64
REPEAT FOR SUBSEQUENT PROCESSING CYCLE

Fig. 4

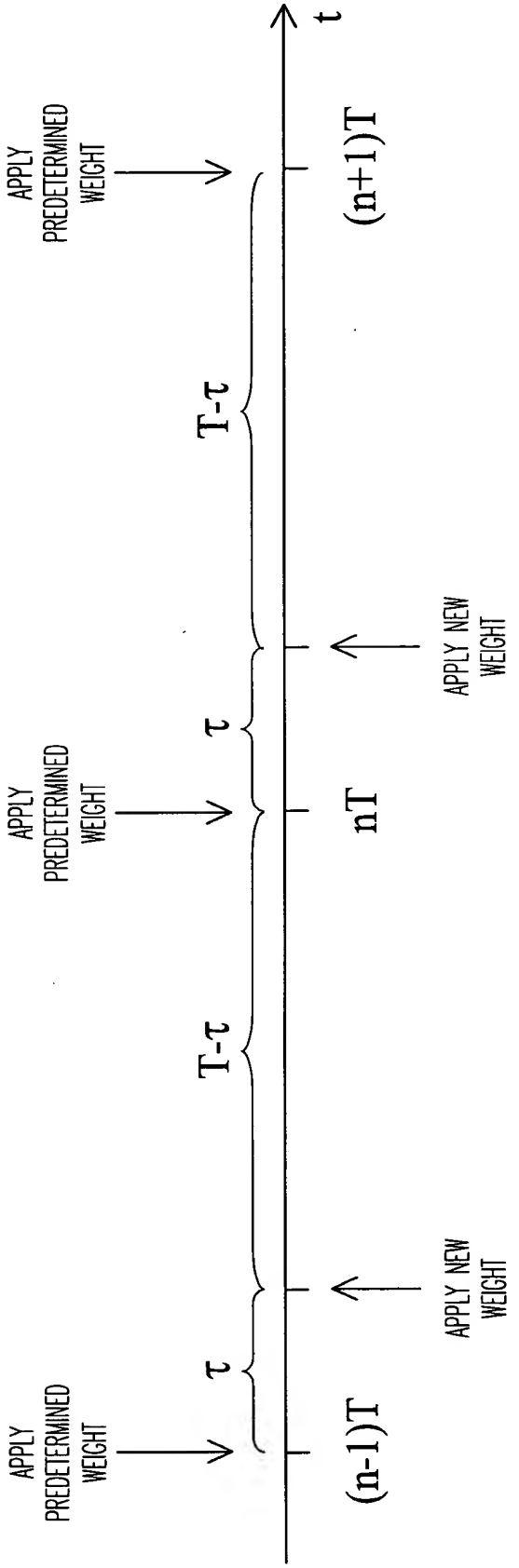
t
APPLY PREDETERMINED WEIGHT
APPLY NEW WEIGHT
APPLY PREDETERMINED WEIGHT
APPLY NEW WEIGHT
APPLY PREDETERMINED WEIGHT
(n-1)T
nT
(n+1)T
τ
T-τ
τ
T-τ

Fig. 5